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Printing History on the Chintz Cloth

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Introduction: The Chitnz is the pictorial cloth used in temples, royal places and even in houses for partition, separation and covering purposes on specific occasions. Its Indian origin has been well established one, as the textile historians have thoroughly gone into the details of Indian methods of cotton[1] yarn dyeing, dye manufacture with plant extracts and salts and printing on cloths. Of which only the usage of chintz cloth for printing pictures of Gods, rulers, temple festivals etc., are studied in this paper in the South India context.

- Hobson Jobson Dictionary[2] gives details about Chintz as printed or spotted cotton cloth; Portuguese chita; Mahr. chīt, and Hindi chint.
- The word in this last form occurs (c. 1590) in the Āīn-i-Akbari (i. 95). It comes apparently from the Skt. chitra, 'variegated, speckled.'
- The French form of the word is chite, which has suggested the possibility of "sheet" being of the same origin. But chite is apparently of Indian origin, through the Portuguese, whilst sheet is much older than the Portuguese communication with India. Thus (1450) in Sir T. Cumberworth's will he directs[3] his "***wrecched body to be beryd in a chitte with owte any kyste***".
- The best chintzes were bought on the Madras coast, at Masulipatam and Sadras.
- The word Chintz first appeared in the 17th century records of the East India Company and it could possibly have derived from the plural north Indian word *chimt 'splattering, stain'*.[4] However, it is not simple 'splattering or even spotted designs, but contain very minute and elaborate details.

Indian Cotton registered the technology: The Indian cotton, cotton cloths, dyed Chintz had been attractive in the ancient civilizations as could be noted from the remnants recovered at the archaeological sites Indus Valley (c.3000 BCE), Mesopotamia[5] (c.1000 BCE), Persia (c.600 BCE), Bahrain, Greece (c.326 BCE), Egypt[6] (known in c.300 BCE), Nubia, Ethiopia etc. The cultivation of cotton (Gossipium Herbareum), manufacture of yarn, and spinning, weaving, dyeing and connected processes were produced in India and then spread westward.[7] Their records were filled with the fantastic "wool-bearing trees" of India ending with a note how Alexander carried [8] samples in 323 BCE. Indian cottons were sold in classical Rome and centuries later in medieval Old Cairo. Cairo was an important re-export point from the eleventh century onward and in the same period, merchants from Coromandel carried cottons eastward to Indonesian and Chinese markets.[9] The Indian process of cotton woven fabrics and cloth has been unique in the textile history of the world. Particularly, the colouring of yarn and dyeing of fabrics and printing on the cloth involved usage of metallic oxides mixed with organic extracts. Thus, the history of Cotton-textiles places ahead of other civilizations chronologically and historiography should be accordingly.[10]

Chintz: The wonder of 17th century and the technology of mordant process and its usage: Indian chintz exposed the pseudo-cotton technology, unhygienic and insanitary conditions of the European life. The glittering chintz exited their curiosity to know the technology behind and get the knowhow. There comes the secret of dyeing cotton yarn, which was invented by the Indians long back. In dyeing comes the role of mordant. The Mordant is a metallic oxide combines with dye to create an insoluble substance that coats the fibre and its origin goes back to the specimen recovered from the Indus valley dated to the second millennium BCE. That the process continued and later reportedly discovered by the Europeans in the 17th century South Indian chintz cloths proves its usage, but unnoticed. In fact, such process is used even today in the manufacture of so-called "tarpaulin" i.e, the coated, covered or impregnated fabrics in India. The two most colours red and black were prepared from alum and iron mordants and they were mixed with other salts to produce different shades and colours. Alum in association with an alizarin dye could be controlled to produce reds to pinks. Iron, when steeped with a sour, acidic substance, yielded a mordant combining with tannin to produce black. The following manufacturing process

succinctly explains such technology used in the manufacture of Chintz.

How Chintz was manufactured?: Indian "chintz" has age-old history, but still the westerners used to wonder,[11] "***It is not known when the Indians started to make the elaborately figured courts and temple hangings that came to be called chintz***". The Europeans tried to learn the secrets from Indians at any cost.

- Antoine Georges Nicolas de Beaulieu,[12] a French naval officer stationed at Pondicherry sent home letters along with actual samples of chintz fabric during each stage of the process to a chemist friend detailing the dyeing process of cotton chintz and his account was published in 1734.
- Father Gaston Coeurdoux, another Frenchman and Jesuit Missionary also supplied details of the chintz making process, in 1742, though he was reportedly trying to convert the Indians to Catholicism and his account was published in 1732 and 1737, and
- William Roxburgh (1751-1815) had recorded the processes of manufacture of Chintz in detail technically dealing with the fabric, dyes used, the sources of dyes and the chemical processes involved. [13]

Thus, the manufacturing details culled from their accounts are briefed as follows:

The complicated process of creating "Painting on Cloth" – Chintz required a week or so depending upon the design.

Procurement of cloth: The finest plain cotton was obtained from the weaving villages in the Coromandel hinterland and they were surprised to note that the cloth was so fine that it was almost impossible to see the waft and weft of the fabric. As the locally grown cotton was not a high enough quality for the process, they noted that Raw cotton was transported 300 miles by bullock cart from north of Hyderabad with the following characteristics: *" the cloth was first partially bleached and steeped in a solution of water, buffalo milk and myrabolan fruit. The fatty buffalo milk ensured that the mordants did not seep beyond the required areas when applied to the cloth: the astringent myrobolan reinforced the action of the mordant."*[14]

"Beetling" or shining process: The cloth is passed into a machine over wooden rollers and beaten by wooden hammers operated by the machine to obtain the beetle finish to cotton or linen giving an appearance almost like satin.

Drawing and painting on the cloth: The design and pattern were drawn onto the cloth with charcoal and then they were finished with hand drawing and painting and block printing. The outlines of the images were in red and were painted with an alum mordant with a bamboo pen (Kalam) originating from the name Kalamarki. Kalamkari is the traditional Indian craft of painting and printing on fabric. The black images were painted with an iron mordant. Illustration completed, the cloth was then boiled in a solution of chay root. Roxburgh described the process of dying with chay root.[15] The myrabolan reacted with the iron mordant to set clean black lines on the image. The chay reacted with alum to produce a deep red color.

Washing, waxing, soaking and drying processes: The cloth was washed in the red dye bath. It was washed many times with animal dung, and then soaked again in a bath of myrabolan and buffalo milk. Wax, used in a Kalam was used to prepare a resist for the white lines. The cloth was once again soaked in a bath of very hot dye from the chay root and only the areas that had been inked with alum mordant would color.[16]

Bleaching, drying and waxing again: The cloth was removed from the dye bath it was washed and bleached for four days at least in a dung bath. Dried, and prepared it was covered in hot beeswax with the exception of the areas that are to be blue.

Sun-drying: It was left in the hot sun for days to melt the wax. It was then given to an indigo dyer who soaked the fabric in a dye bath for about 1 1/2 hours.

Boiling and dewaxing: The fabric was then boiled to remove the wax from the cloth. Green highlights, especially for the leaves were achieved by over-painting a solution of myrabolan gall over the Indigo-dyed areas.[17]

Finishing and packing: There was a finishing process - starching, beetling and 'chanking' to create the polished surface for the fabric - before it was finally folded and packed.

How it affected the Europe / West: K. N. Chaudhuri[18] noted that the adoption and rate of increase in the consumption of Indian textiles in the Western world during the 17th and 18th centuries was one of those astonishing processes of diffusion which was comparable to the discovery and spread of tobacco, potato or tea. Thus, the Indian cotton textiles altered the patterns of agriculture, and changed fashions and concepts of cleanliness.[19] The increase in the exports multiplied in such a way by the mid 18th century, the Indians had virtually clothed the world because of the beneficence of nature of growing cotton and their own genius of technology applied in the production. For the Europeans, it was a wonder of wonders, because, hitherto, they used to wear the woollen cloths and they were hard for cleaning in their cold climates. To suppress the bad smell, they used perfumes. But, the Indian cotton cloths taught them how they could be easily washed serving the same purpose, but with sparkling different colours and attractive designs.

More factories, more Westernization: That by the late 17th century, chintz design had become quite different from the traditional Indian design as it was curious mixture of Indian, Chinese and European designs, classified as "Oriental style",[20] shows that the westernization had already taken place in the manufacture, supply and export of Indian chintz to Europe. The British East Indian Company had similar commercial interests as that of the Dutch VOC realizing the importance of fabric and began to export textiles, such as calico, cotton-cloths, and chintz from India. It adopted different methods to alter "Indian textiles" (manufactured in India) in a way to market "oriental textiles" (of different designs) to a European audience in a similar way the VOC and native Indonesian textiles. Such changes were effected in the design instead of original designs of a tree growing on a mound in indigo earth with floral meanders, which form a succession of border areas with blossoms similar to those in the central panel of figure[21] etc., they introduced random patterns of birds, flowers, of Indian chintz and / or vines.[22] "***The variety, arrangement and colouring were very different from [traditional Indian cotton prints] ... [The main differences being] the detail and complexity of the filler patterns that occupy the space around the main design***". Some new Europeanized Indian chintzes introduced "new colours' and as a result, the chintz appeared very similar to original Indian prints, yet its colours were "non-native".[23] The new hybrid chintz patterns were then exported by the East India Company, sold to European nations, and incorporated in many clothing designs satisfying both men and women.

The French Connection: The French wrote three long and highly detailed first-hand reports about Indian cotton textile production in general and its technology, especially the methods of printing, painting, and dyeing in particular dealing geographically with two of the three centers of Indian textile production – the port city-hinterland complexes of western India (Surat— Amedabad in Gujerat, including Sironji in Rajputana and Burhanpur in Khandesh), and southern India on the Coromandel Coast (including, for example, Masuilipatam, Pulicat, Tegenapatam, Tranquebar, and Negapatnam). They were Roques, a commercial, Beaulieux, and the third – Coeurdoux -a French missionary. At Pondicherry, on the Coromandel Coast, Beaulieux in 1737, and Coeurdoux in 1742 and 1747 wrote authoritative letters and reports on the fabrication of painted cottons in southern India.[24]

History printed on the chintz cloths: There have been Indian textiles taken away from India, but available in different museums – Victoria and Albert museum, London; the Brooklyn museum, USA; Textile museum, Washington DC; and other private collections. Mattiebelle Gittinger[25] has given photographs some of them. A study of Chitnz pictorial cloths shows the following features:

1. It is a historical document in the sense, instead of writing, the events have been painted or printed on the cloth.
2. The human figures represent Kings, chieftains, commoners and others without any differentiation.
3. The figures prove the perfect handling of geometry, symmetry and mathematics converting them into flora, fauna and human figures and patterns.
4. Many times, the author – weaver had incor-

porated his name, message or some writings conveying the origin and purpose.

5. The chintz cloths had history printed on it in the sense, it carried the scenes like – Royal Court proceedings, celebration of festivals, battles, buildings etc., with all paraphernalia. These details can be correlated and corroborated with the material evidences. So they are just like photographs of the respective periods, in which they were printed or painted.
6. The scenes depicted have been extraordinary, because, in one fragment, the scene depicts a woman riding on a horse with a sword marching towards the enemy. The speed was recorded by the flowing backwards of her upper-garment end. Elephants and dogs were depicted moving in the same direction. Of course, at the RHS of the fragment shows such animals coming from opposite direction also. Thus, it could be a battle scene depicted on the cloth.
7. On the reverse of the dyed-cloths, wall hangings etc., signatures are found showing that they might be the owners of the cloth or signed as a token of verification of it.
8. In the scenes depicted from Ramayana, Mahabharata and Puranas, the contemporary trends recorded and registered could be noted.
9. Table covers, canopies (Chandova), woman's shawl (Dupatta), sarees, turban, wall-hangings, secular and religious hangings (used within the temple and for temple cars), screens, Wentke (woman's gown), Tents, blankets used for covering the dead, contain such depictions.
10. They had gold and silver embroidery designs incorporated.
11. The non-Indian designs – resembling Chinese, Persian, and European ones were made specifically made for them.

Similarities between the textile and kolam-muggu-rangholi depictions: Strikingly, the kolam-rangholi patterns drawn on the floors in front of houses (huts to palaces), temples (inside and outside) and royal places and the designs on the chintz-cloths have similar pattern. Kolam / muggu / rangholi[26] are the geometrical, particularly, curved patterns drawn with rice flour, rice-paste or with colour powders.

- They would be according to horizontal and vertical dots fixed in terms of n x n, of which 2 and multiples of 2 are preferred and around which the curve is drawn starting at a point and meeting back at the same point covering all the dots placed in between (8 x 8, 16 x 16 and so on).[27]
- The more the n x n dots, the bigger would be the pattern.
- Incidentally, these curved patterns coincide with CRT pattern of X-Y plot.
- Again, they are also used in weaving in the warp and weft in producing the required design in the cloth woven.

Similarities between the textile and palm-leaf book depictions: Surprisingly, in some palm-leaf manuscripts / books, very similar patterns, designs, figures, geometrical-repetitive drawings are found. Therefore, it is evident that there must have been instruction manuals for such designs and block making used for printing on cloths.

- The division of circle into equal parts making into floral designs prove that there must have been compass like instruments, as otherwise such precision pattern could not have been made.
- Incidentally, such designs and pattern are also seen in the tiles used in IVC.
- Therefore, as rightly pointed out by A. L. Basham,[28] C. L. Fabri[29], K. D. Sethna,[30] Vedaprakash[31] and others, the IVC knowledge must have been percolated down to other areas of India.

This also questions the unexplained gap between the IVC and Maurya periods in Indian history. As the palm-leaf books could last for 1000 years and the cloth-books or textile 500 years, the earlier specimens could have been perished because of usage and time. However, the archaeological evidences prove its antiquity, as proved in the cases of IVC.

Kalinga-Trilinga-Ilanga patterns: Kalinga denotes the present Orissa, Trilinga the Andhra and Lanka Sri Lanka areas, but all were famous for respective cloths and designs on the cloths and textile production. Anga-vanga may also be included. If "anga / angam" is considered, it denotes part and body of human beings and therefore, the cloths used to cover body might have

been called ***anga-vanga-kalinga-trilinga-llanga*** denoting respective origin of the cloths. Incidentally, "***angi***" means dress covering upper body. Anga and Vanga deshas were famous for producing very fine and nice fabric of length that could be folded and could be kept inside a matchbox. Similarly, Kalinga has the following significance.

"Kalingam" denotes fine floral decorated fabric/ cloth: From that time onwards, the Tamils had an obsession of defeating Kalinga and the poem ***Kalingattup Parani*** describes such defeat of Kalinga King Ananda Varman by Kulotunga cholan. Of course, the expression "Kalingam" has been figuratively used in the Sangam literature denoting to a fine fabric with floral designs[32], where warp and weft cannot be seen with different colours.[33] Thus, the Kalingadesa might be producing such fabric / cloth and it was so famous that the fabric / cloth itself was known with the name. It has different connotation in the Tamil literature (more details are discussed below):

1. Fine fabric / cloth where warp and weft cannot be seen.
2. Fabric / cloth with floral design,[34] thus might be printed.
3. Embroidered cloth.[35]
4. Upper cloth.
5. Blanket in general.
6. Blue colour blanket or the skin shredded by snake.

It has to be noted that during the medieval period onwards, in the export of Indian cloth to other countries, there had been a tough competition among the manufacturing and trading centres leading to battles and even over-sea expeditions as happened in the case of Sri Vijaya episode. Thus, the "Kalingam" might have created a problem between "Kalinga" and "Dravida", as happened in the case of Cheras. Even though, the Cheras had been the Tamil Kings, they were taken to task by Rajaraja Chola, when they started directly dealing with the Arabs and others, in the case of manufacture of boats, ship-building and selling them.[36]

Trilinga-llanga deshas: Trilinga and Ilanga/ Ilangai deshas were – known as "Coromandel coast" (the eastern coast covering areas from Krishna River or even beyond[37] to Sri Lanka) - also famous for producing fine cloths, though became famous in the 17th – 18th centuries for Chitnz. Here, it may have to be noted that the intervening Tamizhagam was not having such equivalent name fitting into anga-vanga-kalinga-trilinga-ilangai (probably, the old name might have been forgotten). Machulipatnam, Arumuganeri, Pulicat, Chennapatnam, Sadras, Tranquebar, Tutocorin etc., had been not only textile producing centres, ports but also the places where the European Companies had factories producing Plain white textiles, checks and stripes and chitnz . The places where particular variety of textiles produced and exported are shown as follows.

Major textiles producing and exporting areas – 1600-1750

Ports texitles variety	Plain White ☼	Checks and stripes ✠	Chitnz ֍
Petaboli	☼	NIL	֍
Madras	☼	✠	֍
Pondicherry	☼	✠	NIL
Nagapatnam	☼	NIL	NIL

As early as in 1750, the value of EIC sales[38] in London accounted maximum for Indian textiles to the extent of 60%.

Madras and Ventupallam "handkerchiefs": "Madras" was synonymously used for handkerchief, as the westerners were getting it from Madras, which was attractive with colours, pattern and coming in squares. The "Madras handkerchiefs" were so famous that they figures in many western novels - Uncle Tom's Cabin, Tom Cringle's Log etc. The Manchester tried its best, but it could not copy or imitate the pattern and colour of Indians.[39] It was considered as symbol of hygiene in the western world[40] mainly used for the body Hygiene and the convenience, in particular for moucher (to wipe out mucus). The manufacture of block-printed and hand-painted palempores, and other cotton fabrics were so famous and they were produced at Masulipatam and Walajapet with wooden blocks of beautiful patterns. "Pelampore" (Pazhampur = old towns) was also synonymously used for decorated car-

pets and cotton fabrics. The printed cottons of Masulipatam consisted of canopies, screen-cloths, prayer-cloths, etc. At Kalahasti, painted cloths are made, on which are depicted crude illustrations of scenes from the Hindu epics, the Mahabharata and Ramayana, with the story in Telugu characters and at Cocanada fabrics with the tree of life pattern are also made. Thus, the manufacture and export of "Madras" was only the extension of the existed textile technology catering to the needs of the westerners during 17th-18th centuries.

The "chithiratthugil" / "flowered cloth" of Sangam period: It is noted that Tamizhagam was not having such equivalent name fitting into anga-vanga-kalinga-trilinga-ilangai, however, considering the ancient Tamil literature, it is evident that Tamizhagam was producing such fine fabrics, cloths with floral design etc. The specific word for pictorial cloth (Chithiratthugil) has been "Punthugil" found in the Sangam literature denoting a cloth with floral design / pattern. The word "thugil" is very significant connected with drawing and painting, as the word "thukiligai" means brush.[41] Another word "thirai" connoting "thiraicchilai" denotes curtain. When lovers embrace each other, they hang a curtain.[42] Yet another word "thiraippu" points to a specific hanging used for decorating the Marriage Pandal.[43] Now the different meanings, the word "thugil" is considered as follows:

- Washed cloth (Puram:337:9,10ϑ).
- Smoke like cloth (Puram.398:19-20).
- Cloth with floral design (Pathitrupattu: 54-5-6).
- Ladies worn cloth with floral design (Murugatruppadai.15).
- Fine and soft cloth (Murugu.213-214).
- Fine woven cloth compared to the cobweb (Perunatruppadai.234-237).
- The saree was woven with coloured yarn with floral design (Nedunalvadai.145-146).
- Beautiful top cloth worn by women sliding down from their shoulders denoting the softness of the cloth (Nedu.181-187).
- White silver like cloth (Kurinjipaattu.55).
- Cloth washed and starched (Agananuru:387: 6-7).

Like this, there have been hundreds of references and they clearly point to the prevalent of chintz like cloth manufactured and used in the Sangam period. The different specific adjectives used point to the textile processes used in bringing out such fabrics. Incidentally, though the cloths were manufactured in different parts of South India, they were exported through the Tamizhagam ports as mentioned above. Incidentally, the word "thuni" used in the present context had different meaning (piece / part) during the Sangam period. Or it could be interpreted that when required length of cloth was cut from the running length, it might have been called "thuni". Here, the British noting about the chintz has been relevant. The English traders always referred to them as "piece goods" – each piece was usually about a yard wide (the width of the loom) and between ten and twenty yards long depending upon type.[44] Thus, "thuni", "thundu", "chitta" etc., tally with "chintz" and 'kerchief", as both categories had been of the same variety.

In Indian history, the phenomenon noticed is that there are people with literature without material or archaeological evidences and vice versa. But, as all were part and parcel of ancient India or Bharat, such lacuna cannot be a drawback or shortcoming. In fact, it could be interpreted that the ancient Tamizhagam i.e., the South India could be the origin of such textile technology and later spread to the other parts of India towards north or the respective areas could be the centres of producing a specific variety of cloth, fabrics and Textiles. In any case, it could not be a mere coincidence that the same centres happened to play key-role in 17th-18th centuries.

Connecting practice with theory and vice versa: Some western writers[45] ask, "***Europe manage to innovate by connecting practice and theory or by providing a conducive context in which prescriptive and propositional knowledge entered into a positive feedback system.***[46] ***Why India did not do the same and whether this potential was suppressed by European colonization are matters of debate?***". But, they have to confess that with all their innovative wisdom of connecting practice and theory, they had raped, looted and spoilt the existed Indian system of science and technology,[47] which was owned by people and not by the

government or the patent regime. The simple truth is that while Indian believed in "production by mass" for the welfare of the people and the nation, the western profiteers of all sorts pursued the anti-people policy of "mass production" with machineries under the claims of innovative technology. How was then India able to catering to the needs of Europe in 17th-18th centuries? Are the cotton raisers, cotton-dyers, cloth-manufacturers idiots, but cloth-looters, dealers or buyers wise?

The problem with the historiography has been the blatant bias against India in many aspects from art,[48] to science[49] business to commerce and import to export. When pointed out, immediately, it is dubbed as "nationalistic" and so on. But suppressing the historical facts, asking one-sided questions, continuing research and professional debate under colonial role etc., do not justify such misrepresentation, misinterpretation and misinformation of historical evidences against India. After making India pauper,[50] what is the fun of asking them to lead five-star life, as they know the theory of living but cannot practice? This has been the trend of present historiography that makes Steve farmer[51] to declare "the illiterate Harappans" arrogantly.

Conclusion: The study of Chintz shows that how India was dominating in the textile trade during the earliest times and as well as during the 17th-18th centuries. The analysis of South Indian literary evidences with that of the European writings prove that South India – the present areas of Andhrapradesh and Tamilnadu - was famous for the manufacture and export of Chintz cloths and textiles,[52] which had created a great impact on the European and western society in hygienic and dress material usage accordingly. The European companies exploited the Indians, Indian goods and ultimately ruling the country. The tactics followed in obtaining the process of manufacture of Chintz, establishing factories in India, export thereof and the involved commercial and political ramifications, where they had completely betrayed the trade agreements hijacking the commercial transactions over the political ambitions.[53] It is a mystery as to how they could cheat all the Indian merchants, traders, manufacturers, labourers at all places and consequently enslaving them and ruling them.[54] The technical know-how was obtained applying unethical practice and the complete technology transfer taken place without any proper technical fees and royalty thereof, had been the circumventing tactics of them.[55] With all implications, the denial of credit to India, particularly, the South India had been unfortunate. Thus, Chintz tells its own history, even though, it was made into pieces, as again each piece bears history imprinted on them!

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16. Fr Coeurdoux recalls blue dying coming between the dyeing of the red outlines and the red areas of color, Ibid., pp.40-41,57-8
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25. Mattiebelle Gittinger, ***Master Dyers to the World: Technique and Trade in Early Indian Dyed Cotton Textiles***, opt.cit.
26. Kolam in Tamil, muggu in Telugu and rangholi in Hindi denote such patterns drawn by the women on the floors on the occasion of celebrations and festivals, besides daily in front of their houses.
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32. In fact, it resembles 17th-18th century "Chintz" cloth exported in huge quantities to European countries, as they were in great demand there in that period.
33. Hundreds of reference is available in the Sangam literature. For details, see in: R. Sarangapani, ***Sanga Ilakkiya Porut Kalanjiyam*** (A Tamil Sanga literature Lexicon), Tamil University, Thanjavur, pp.161-162.
34. Resembling block printed, "Kalamkari" type cloth.
35. Kalittogai:92:46; ***Silappathikaram:*** 22.21.
36. K. V. Ramakrishna Rao, ***The Shipping Technology of Cholas***, a paper presented during the 27th session of South Indian History Congress held at Rajapalayam from Feb. 2 4, 2007, PSIHC, Rajapalayam, 2007, p.333.
37. T. H. Holland, ***Provincial Geographies of India***, Cambridge: at the University Press, 1913, p.11.

38. Anthony, ***Trading places: he East India company and Asia***, http://jds.cass.cn/english/20061130162658.asp
39. T. H. Holland, opt.cit, pp.226-227.
40. http://www.speedylook.com/Handkerchief.html
41. Natrinai.118:7.8.
42. Paripadal.10:34.
43. Kalittogai.115:19,20.
44. Anthony, ***Trading places: he East India company and Asia***, http://jds.cass.cn/english/20061130162658.asp
45. Giorgio Riello, ***The Rise of Calico Printing in Europe and the Influence of Asia in the Seventeenth and Eighteenth Centuries***, **For details, see at: http://www.lse.ac.uk/collections/economicHistory/GEHN/GEHNPDF/PUNERiello.pdf**
46. Sangwan, ***Science, Technology and Colonisation***, p. 8.
47. They passed different Acts and rules prohibiting in running traditional industries, carrying out such trade and perform business activities with ethics.
48. Partha Mitter, ***The Much Maligned Monsters: A History of European Reactions to Indian Art***, The University of Chicago Press, Chicago, 1992.
49. P. J. Marshal, ***The British Discovery of Hinduism in Eighteenth Century***, Cambridge University Press, UK.
50. Dadabai Nauroji, ***The Poverty and the UnBritish Rule in India***, Publication Division, New Delhi, 1998.
51. http://www.safarmer.com/washstate.pdf
52. Ebeltje Jonxis, ***Some Coromandel Chintzes***, Bulletin of the Needle and Bobin Club, Vol.53 (1,2), pp.37-57. Also, see at: http://www.cs.arizona.edu/patterns/weaving/articles/nb70_chz.pdf
53. This should an eye-opener in the present day context of liberalization, privatization and globalization processes, where goods and services are sold to the benefit of the westerners.
54. It should be more than the usual reason given that the British adopted the policy of "divide and rule", because, in these processes with the division of people, the goods could not have been produced.
55. The camouflaged rule of India by following extortion to "Doctrine of Lapse" etc., besides passing draconian Acts and Rules may have to be studied separately.